

ORIGINAL RESEARCH

Overtraining in the Fitness Industry: How Business Incentives Influence Exercise Behavior

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Abstract

This paper examines how fitness industry practices may contribute to the risk of overtraining and influence exercise behavior among consumers. While overtraining is often viewed as the result of individual decision-making and personal discipline, this research argues that broader industry forces may also contribute to the issue. Using primary research from surveys as well as secondary research from industry reports, academic journals, fitness marketing materials, and health-related publications, the study explores the possible influences on exercise and recovery behavior. The findings suggest that fitness business models, marketing strategies, and performance-based incentives may encourage individuals to train more intensely and more frequently than is sustainable. Although awareness of overtraining has increased, many individuals may overtrain due to various societal pressures. How often one trains as well as their prioritization of recovery may be partly influenced by fitness industry structures that create training incentives and social pressures, and this paper explores whether this relationship warrants further study.

Keywords: Overtraining; Fitness Industry; Exercise Behavior; Consumer Health; Fitness Marketing; Business Models

1. Introduction

The World Health Organization estimates that 31% of adults and 80% of adolescents do not meet the recommended levels of physical activity (11). While most people may not reach the recommended physical activity guidelines, some frequent gym goers may feel pressure to exercise excessively. In the context of fitness, individuals are often encouraged to consistently train in order to improve health and performance. This mindset may be reinforced by fitness culture and social media, where frequent gym attendance is associated with discipline and success. However, while regular exercise is beneficial, there is a point where training too much becomes harmful instead of helpful to the body. Overtraining occurs when exercise volume or intensity exceeds the body's ability to recover, leading to decreased performance and negative physical effects (3). Additionally, when certain muscles are targeted in exercise, they become fatigued and require rest in order to recover and perform properly in future workouts. Muscle growth primarily occurs during periods of recovery rather than the workout itself, making recovery essential for improvement (8).

Because of this, many people use training splits, where different muscle groups are trained on different days. For example, someone might train back and biceps one day and legs on another day. This is meant to give muscles time to recover, but overall fatigue can still accumulate. Even when a certain muscle group is trained, others are still being used as support and can eventually become strained over time. As a result, the body can grow increasingly worn down when training on consecutive days.

As a part of fitness culture, many gyms, fitness apps, and influencers frame frequent training as necessary for good health. Businesses have an economic incentive to encourage training as they generate revenue when people are continuously paying for their services. In this research paper, the term “business incentives” primarily refers to the financial structures which reward gyms, brands, and fitness apps through customers’ continuous engagement, frequent participation, and purchases of related services or products. Rather than imply that businesses intend to harm customers, this term serves to describe how businesses earn revenue in the industry. This paper explores whether these industry and financial structures may create pressures that influence recovery prioritization and training frequency of customers. In this paper, there are three business practices evaluated: the premium boutique fitness model, influencer and social media based brand marketing, and the sale of recovery products.

In practice, the content these businesses produce may depict dramatic transformation results and extreme workouts. This exaggerated content may do its intended purpose by motivating people to increase their dedication to working out, but it could also have unintended consequences: some people may feel the need to train more than necessary to keep up with these unrealistic standards and transformations. This pressure may ultimately push some people to overdo exercise, leading to potential drawbacks such as not recovering properly. The frequency of a person’s training and how much they prioritize recovery may be partly influenced by business practices which form social pressures and incentives to train more, and this paper explores if this relationship is significant enough to validate further study.

2. Literature Review

Current research on the fitness industry indicates that commercial incentives, as opposed to health models, serve as a basis for the operations of many gym and fitness brands. The US fitness industry is a \$30 billion business industry, and research suggests it prioritizes profit over the promotion of health for consumers (7). The profit motive itself goes beyond the base gym model of just selling memberships. Businesses in this fitness industry may also financially benefit from consumer demand through recovery-related products associated with intense training (7). Various recovery products such as percussion massage guns represent an overall trend of growing revenue within the industry (6, 7). While the use of these products in relation to training culture reveals an area in which the industry earns money, it does not indicate that businesses either benefit from or intend for their customers to overtrain. Consequently, a connection between the two may remain an open question.

Consumer preferences may also play a role in the issue of overtraining. The recent surge in fitness industry consumerism and membership has been driven especially by boutique fitness studios, which are smaller-scale gyms offering alternative high-intensity workouts such as cycling and HIIT training. This sector makes up approximately 40% of the overall health club market (10). As a result of the personalized workout experience and the community-grounded environment that boutique fitness studios offer, members are often willing to pay relatively high prices for workouts and memberships (9). While existing literature details this business model, it does not test how the model affects training behavior. One potential mechanism is that paying a premium price rate and belonging to such a tight-knit community could create pressure to attend frequently. This pressure may be based on factors such as getting one’s money’s worth out of the class or meeting group expectations of attendance. This could potentially leave less room for rest days and, as a result, contribute to poor recovery.

The high demand for boutique fitness studios is reflected in business strategy and pricing models. Boutique studios operate on a premium pricing-based model due to the high amounts customers are willing to pay, resulting in higher profit margins. Regardless of the pricing model used, businesses have often been critiqued for the idealized marketing campaigns they offer (1). Social media campaigns for

businesses center around the aesthetic side of fitness, such as mirror selfies, matching workout sets, and even expensive smoothies. However, these campaigns may neglect to display the less glamorous aspects of the fitness lifestyle, which may perpetuate unrealistic norms (7). This type of heavily idealized content may set unrealistic expectations which could make ordinary training appear to be insufficient. Xiao et al. (12) found that this fitness social media use is associated with exercise behavior due to factors including intrinsic motivation and exercise intention. This indicates one possible way in which fitness content may influence customers' training frequency. Although this pattern normalizes success within health goals, it is worth noting that less than a quarter of U.S. adults meet the recommended guidelines for aerobic and muscle-strengthening activity (2).

Overall, the current research surrounding the fitness industry and business models revolves around profit-driven pricing models, aggressive marketing techniques, and evolving consumer trends. However, rather than evaluating how business practices influence consumer behavior, current research simply aims to ethically critique businesses or evaluate industry growth. There is a scarcity of studies connecting broader fitness industry incentives to specific tendencies of consistent exercisers. This paper aims to address this gap. By utilizing a variety of sources through primary and secondary research, this paper will explore a possible connection between consumer behavior and businesses in a sector that has been traditionally explored from a business model standpoint.

3. Methodology

This paper draws on findings from both primary and secondary research. Primary research consisted of a 6-question survey distributed to peers and other regular gym-goers. The questions in the survey centered around frequency of training, perceived pressure from the fitness industry to work out frequently, extent of incorporation of recovery into training routines, and factors influencing training frequency. A total of 15 participants completed the survey. These participants were aged 15 to 60 and had levels of training experience ranging from intermediate to advanced. The sampling method for data collection was convenience sampling, as the survey was distributed to peers who train at the gym. While this sampling method may present significant coverage error due to its lack of generalizability to a broader population, it is sufficient for preliminary research as to how multiple age demographics receive and respond to the fitness industry and recovery. After collecting responses, the data was analyzed by identifying trends and calculating response frequencies. The results were then compared to findings discussed in the literature review.

Furthermore, secondary research was derived from various sources, including academic journals, media publications, and commercial reports. These sources were used to establish the conceptual and practical foundation of the paper, as well as analyze the fitness industry's actions. These sources also provided significant conceptual understanding surrounding ideas such as overtraining and muscle recovery. Overall, both primary and secondary research allowed for an interdisciplinary and multifaceted exploration of the possible driving factors of training and recovery behavior.

4. Results

A total of 15 individuals completed the primary research survey. All 15 participants who completed the survey reported engaging in consistent exercise, so the full sample was used in the analysis. The responses were reviewed through brief calculations of the percentage spread of answers to each of the six survey questions and by identifying the mode response, or most frequently selected response, from each category to determine general trends. The trends observed were hence compared against findings displayed in the literature review.

Note that training in a frequency range of 4–7 days per week may be appropriate for some individuals, depending on intensity, duration, recovery, and the type of exercise. As this survey alone did not measure the above variables to determine the toll of a training session on an individual, frequency alone does not directly establish overtraining.

Table 1. Overall, the survey responses indicate training is common among participants, while structured recovery practices are considerably less common.

Survey question	Response options and percentage distribution
Days per week trained	0–1 days: 6.7%; 2–3 days: 20.0%; 4–5 days: 60.0%; 6–7 days: 13.3%
Frequency of impactful pressure from fitness industry	Never: 20.0%; Rarely: 40.0%; Sometimes: 33.3%; Often: 6.7%; Always: 0.0%
Decision-making while sore or fatigued	Always rest: 20.0%; Usually rest, occasionally push through: 53.3%; Often continue despite fatigue: 13.3%; Rarely rest: 13.3%; Don't train frequently: 0.0%
Incorporation of recovery in training regimen	Central part of planning: 26.7%; Considered but not planned around: 46.7%; Not factored in much: 13.3%; Never considered: 13.3%
Fitness industry content exaggeration level	Not at all unrealistic: 0.0%; Slightly unrealistic: 33.3%; Moderately unrealistic: 53.3%; Heavily unrealistic: 13.3%
Main influence on frequency of training	Personal health goals: 86.7%; Gym culture/peer pressure: 13.3%; Trainer/coach advice: 0.0%; Social media/influencers: 0.0%; Structured program/app: 0.0%

While 26.7% of the 15 participants considered recovery to be a central part of planning their workouts, 46.7% considered it without planning around it, and 26.6% gave recovery little to no consideration. In addition, 53.3% of participants usually rest but occasionally push through, and 26.6% combined either often pushed through fatigue or rarely rested despite fatigue. Overall, these statistics combined reveal that 73.3% of participants total did not treat recovery as a central part of planning, and about half sometimes pushed through fatigue or soreness. These proportions highlight a potential risk of inadequate recovery among the 15 participants surveyed.

A comparative analysis has been conducted in order to effectively organize primary and secondary findings while utilizing criterion from a typical SWOT analysis. This allows for easier integration of the fitness industry's position as reflected by the previously collected data.

4.1 Comparison of findings from primary and secondary research

There are various points of cohesion and friction when considering the relationship between primary survey data and secondary research from literature reviews. There is agreement between the survey statistic of 73.3% of survey participants training for 4 or more days per week and secondary research's detailing of boutique fitness culture as a culture that may perpetuate and normalize high frequencies of training (10). The premium pricing models of these fitness studios are displayed in literature as key factors in consistent consumer engagement. The effect of the pricing models suggested is consistent with the high frequency that survey participants reported. The agreement between these two results is consistent with the training behaviors derived from the primary research survey and behavioral patterns that secondary literature attributes to fitness industry structures.

In addition, the primary research survey's findings surrounding recovery align with secondary literature. The literature notes that both physiological adaptation and muscle growth are prone to occur during rest days rather than concurrent with training (8). However, only 26.7% of survey participants revealed that recovery was a central point in their routine. The rest largely considered recovery without planning based on recovery needs or completely neglected the need for their bodies to recover. Therefore, the lack of emphasis on recovery for one's health and the lack of prioritization of recovery in participants' routines outline a pattern through both primary and secondary research.

Despite the multiple agreements between primary and secondary research, inconsistency emerges when considering the role of the fitness industry in personal and behavioral decision-making. Not only does literature indicate the fitness industry's marketing tactics produce unrealistic standards contributing to an excess of training, but roughly 66.6% of survey participants described industry content as moderately or extremely unrealistic. However, the vast majority of survey participants, 86.7%, attributed their

Table 2. Comparative Analysis

	Primary Survey	Secondary Research	Interpretation
Training frequency	73.3% train 4+ days/week	Boutique gyms encourage frequent attendance and high intensity training (10)	Findings align, as the high training frequency in the survey is consistent with industry models built around customer engagement, despite the fact that the survey cannot prove the industry caused it.
Recovery	Only 26.7% of participants list recovery as central to planning and 26.6% give it little to no consideration	Overtraining syndrome has no gold standard diagnostic test and has reached 60% among elite runners (5)	Findings align, as low recovery prioritization may be consistent with the difficulty of identifying overtraining.
Marketing	66.6% of participants believe fitness industry content is moderately or heavily unrealistic	Fitness inspiration influencers display higher compulsive exercise tendencies and eating disorder risk than other influencers and report high body dissatisfaction levels (4)	Findings align, participants' perception of unrealistic content is consistent with documented possible physiological and psychological harms linked to such content
Motivation	86.7% associate their training frequency with personal health goals despite 80% recognizing some form of external pressure to train	Social media influences exercise behavior using intrinsic motivation pathways, so industry influence can be registered as personal goals (12)	Findings do not align; the survey supports personal motivation, while secondary research suggests personal and industry influence are intertwined

training motivation to personal health aspirations as opposed to fitness industry influence. These two seemingly contradictory results can be true at the same time; secondary research on the fitness industry suggests that fitness content may influence consumers' intrinsic motivation pathways and through this exercise pressure without being identified as external pressure (12). The motivation that survey participants identified to be personal and autonomous may be perpetuated through normalized marketing techniques and incentives based on performance as described by secondary research.

5. Discussion

The survey results are consistent with the theory that business practices could partly influence a person's training habits and recovery planning. However, the small sample size indicates that these results can only be viewed as suggestive and not concrete evidence. Several vital ideas from the results of primary research, secondary literature, and secondary research shown in the comparative analysis must be utilized to reach a meaningful conclusion.

Fewer than a third of participants implement structured recovery into their routines. The primary survey data reveals that most survey participants trained 4 or more days a week. While this may be a potential indicator of inadequate recovery, 4–7 days a week of training may be appropriate for people depending on duration, recovery, the type of exercise, and the intensity of said exercise. This pattern is consistent with secondary literature's indication that industry structures often place less emphasis on rest days. One possible mechanism is that the fitness industry's creation of performance-based incentives such as attendance tracking, models of boutique fitness studios, and influencer challenges may implicitly devalue rest as a core component of training.

Consumer and societal perception of unrealistic fitness industry content should be thoroughly evaluated to effectively grasp the implications of industry marketing. In the primary research findings, 0% of participants described the industry content as fully realistic. A majority of participants detailed this content to be moderately to heavily unrealistic. These findings are consistent with secondary research, which documents marketing in the fitness industry to be overemphasizing aesthetic and performance

results while omitting the challenges of sustained training across larger time periods. This consistent perception across a majority of the sample group of the survey suggests that there may be strong and widespread awareness of the unrealistic implications of industry standards driven by marketing.

While consumer perception of fitness content and the gap between training frequency and low recovery implementation are vital when inspecting the role of the fitness industry in exercise and recovery behavior, the lack of connection between external pressure and self-reported motivation must be directly analyzed. The contradiction is exposed by the results of the primary research survey: while 80% of participants experienced some form of pressure from either social media, influencers, or gym culture, over 86% believed their training frequency was driven by personal health goals. The lack of agreement between external pressure perceived and motivation observed raises the issue of whether industry influence can actually be separated from individual decision-making. Secondary research suggests that behavior from “intrinsic motivation and exercise intention pathways” (12) may be formed by fitness content without this content being identified as an external motivator. The primary research survey’s data is consistent with this, as respondents may perceive performance-based incentives from industries as personal and internal health goals. One possible explanation for this consistency could be that their decision to train frequently may be partly explained by pressures they don’t consciously recognize from the fitness industry.

The comparative analysis broadens the individual findings to a higher-level commercial structure of the fitness industry. Altogether, the boutique fitness pricing model, large amounts of industry revenue, and high demand for recovery products suggest that the fitness industry’s financial structure and the training frequency reported by participants may be related, rather than misaligned. The growth of the percussive recovery device market, to approximately \$1.1 billion in 2026 (6), is a potential sign of demand for recovery products, which may be related to but does not directly prove overtraining. Taking primary and secondary research results together, the influence of the industry on training and recovery can be neither eliminated nor proven; while the survey’s participants detailed their reasons for training as due to personal goals, literature review suggests a possible role of incentives and social pressures that participants may not recognize as external pressure.

However, several limitations should be considered when evaluating the practical implications of this paper. The primary research survey relied on a sample size of just 15, collected through convenience sampling, which significantly hinders the generalizability of this survey. Furthermore, the survey’s self-reporting nature may cause bias through a person’s willingness to select socially acceptable answers. This is a stronger consideration when evaluating recovery habits and workout routines, as the participant may idealize their gym habits rather than list what they actually execute. Furthermore, this survey was unable to measure any form of symptoms of overtraining, intensity of workouts, or session length. This means that it is unable to establish claims based on causation. As a whole, research on larger sample sizes, a wider variety of demographics, and with higher aptitude to prove causation may allow for more accurate and effective conclusions to be drawn.

6. Conclusion

Ultimately, this paper evaluated the connection between the fitness industry model and overtraining behavior of consumers. Primary research data showed relatively high frequencies of training, a lack of consistent recovery planning, and a widespread perception of fitness industry content as highly unrealistic among survey participants. When combined with secondary research describing the commercial incentives in relation to frequent training and the sizeable market of recovery products, the primary research suggests that there may be a possible relationship between overtraining and both an individual’s decision-making and broader forces of the fitness industry, which may be worth investigating with studies of larger scale and more rigorous nature. Although the limitations of this study’s sample size may hinder generalization of primary survey results, the survey results are generally consistent with the patterns identified in secondary research. Business incentives and marketing are best understood as one possible contributing factor among several others towards overtraining, alongside personal health goals,

peer influence, and gym culture, and this study cannot establish that they cause excessive training.

Conflicts of Interest

The author declares that there are no conflicts of interest related to this work.

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A. Survey Questions

Below are the survey questions utilized in the primary case study.

1. **How many days per week do you currently exercise or train?**
 - 0–1 days
 - 2–3 days
 - 4–5 days
 - 6–7 days
2. **How often do you feel pressure from social media/fitness influencers/gym culture to train more than your body feels ready for?**
 - Never
 - Rarely
 - Sometimes
 - Often
 - Always
3. **Think about your workouts in the last month. Which of the following best describes your decisions while feeling sore or fatigued?**
 - I always take rest days when my body feels fatigued or sore
 - I usually take rest days but occasionally push through
 - I often continue to train despite fatigue/soreness
 - I rarely take rest days despite how my body feels
 - I don't work out frequently
4. **How much do you factor in recovery when planning your training sessions?**
 - It is a central part of my planning and workout schedule
 - I think about it but don't usually plan around it
 - I don't factor it in much
 - I've never really considered it
5. **How much do you think fitness industry content (such as gym ads, influencer posts, body-builders, and fitness apps) promotes unrealistic training expectations?**
 - Not at all; the content is realistic and responsible
 - Slightly; some content is exaggerated but doesn't have a huge impact
 - Moderately; a lot of content sets unrealistic standards
 - Heavily; most content promotes excessive or unrealistic training
6. **What influences your frequency of training the most?**
 - Personal health goals
 - Advice from a trainer/coach
 - Social media or fitness influencers
 - Gym culture or peer pressure
 - A structured program or app